Meeing minute of April 4, 2008

Charles first reported the status of the DC spin rotator. One of the two 10IV72 dipole magnets he found in SLAC is missing septum plate. The other one is intact. He also found a 10IV72 in Fermi Lab with the possibility of an additional magnet. His findings then allow us to go with the 4 magnets solution. Since Mike have 5'' pipes available, he suggested to keep the 10IV72 gap at 6''. Phil also confirmed that this should be okay with the power consumption with 8 magnets(4 magnet solution). The tape transition will be used between the beam pipe with different size.

We also agreed that we should have some 2-D modeling of these magnets as well as field measurement of one magnet since not many documents are available. As for the power supply for these magnets(about 700 Amps and 30 V), Phil and John confirmed that we have plenty of the spares.

Charles also showed a drawing of the layout of the Blue ring Spin Flipper in sector 9. Yousef estimated the cable length to the service bldg 1010 is about 300 feet. A total of 4 cables will be needed.

Chien also showed the final design of the ac dipole assembly including the ac dipole installation. According to the design, the total length of the ceramic chamber is 50''. The whole ferrite window consists of 4 sections. The total weight of the assembly is about 180lb. Meng also did final optimization based on the design. The current specs are

- Inductance 91.5 uH
- Central field 99.085 Gauss, current 118.58 Amp
- Integrated dipole field 100.58 Gauss-m
- Dipole magnetic length 1.015 m
- Ratio of sextupole to dipole at 2cm radius is 0.0001

Currently, we already received 3 quotes for ceramic pipe. The procurement department is in contact with the lowest bidder for some clarification. The designer is working on modeling and part drawing of the ac dipole coil and its wing fixture. It will be ready for procurement as soon as this is done. The estimate is about 1 month. The design layout of ferrite and support stand are also ready for detailing.

Peter also gave a brief report on his investigation of the ac dipole power amplifier. Currently, he is looking at the following three options

1. a 1kw solid state power amplifier, cost about $19800 per unit
2. ENI power amplifier, cost about $6000 to $12000.
3. an audio amplifier, for this, we need to build additional transformers to match the magnet

He is also working on the dynamic tuning testing box. Expect to have results in about a month.

Thomas also commented that we need a spread sheet on cost estimate. Mei will also work on the tolerance on the field errors.